Joseph W. Cutler

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Education

- **University of Pennsylvania**, Philadelphia, PA. 2021 - Present
  - **PhD**, *Computer Science*. Advisor: Benjamin C. Pierce
- **Wesleyan University**, Middletown, CT. 2017 - 2021
  - **BA**, *Computer Science* (with high honors) and *Mathematics*, GPA 3.98/4.00.

Research

- *Languages with Potential: Types & Recurrences for Formal Amortized Analysis*. Undergraduate Honors Thesis, 2021.
- *Denotational Recurrence Extraction for Amortized Analysis*, **Joseph W. Cutler**, Daniel R. Licata, and Norman Danner. Proceedings of the ACM SIGPLAN International Conference on Functional Programming, 2020.

Work Experience

- **Technical Intern**, Correct Computation, Inc. Summer 2021
  Worked on Affix, a tool for generating C code models of binaries.
- **Research Intern**, Max Planck Institute for Software Systems (virtual) Summer 2020
  Research in refinement type-based techniques for resource analysis. Implemented λ-amor, a highly expressive refinement type system for amortized analysis.
- **University Research Fellow**, Wesleyan University Summer 2018, 2019
  Did research in resource analysis, working to extend prior work on automated recurrence extraction to deal with amortized analysis. Resulted in a paper published at ICFP '20.
- **Student Forum Leader**, Wesleyan University Spring 2018
  Lectured on Haskell, alongside a grad student who had designed the course.
- **Course Assistant**, Wesleyan University 2018 - 2021
  Graded assignments, led TA sessions, and aided with labs for the following classes:
  - COMP 360 - Applied Logic & Logic Programming (Fall 2020)
  - COMP 323 - Programming Language Implementation (Spring 2020)
  - COMP 212 - Computer Science II. (S/F 2018, S 2019, S/F 2020, S 2021)
  - COMP 112 - Introduction To Programming. (Summer 2018)
  - MATH 261 - Abstract Algebra (Fall 2020)
  - MATH 223 - Linear Algebra. (Fall 2019)
  - WesMASS COMP 211 - Mini-Course Computer Science I. (Summer 2018)
- **Software Development Intern**, Flatiron School, New York, NY: Summer 2016/17, Winter 2018
  Worked on Flatiron School's online learning platform, Learn.co.
- **Teaching Assistant**, Upperline School of Code, NYC August 2017
- **Teaching Assistant**, Flatiron School, New York, NY Fall 2014 - Summer 2015

Awards

- *Michael Rice Prize*, Awarded to a senior for excellence in computer science. (2021)
- *Phi Beta Kappa* (2021)
- *Shortt Prize*, Awarded to a junior for excellence in mathematics. (2020)
- *Robertson Prize*, Awarded to a sophomore for excellence in mathematics. (2019)
- *PLMW @ ICFP Funding* (2020)
- *Cornell, Maryland, and Max Planck Pre-Doctoral Research School (CMMRS) Travel Award* (2019)

Attended

- *Cornell, Maryland, Max Planck Pre-doctoral Research School*, Saarbrücken, Germany (August 2019)
- *Oregon Programming Languages Summer School*, Eugene, OR (June 2019)
  with funding from Prof. Licata

Service

- **Volunteer**, #ShutdownPL ICFP (2020)
- **Computer Science Club Steering Committee**, Wesleyan University (2019-2021)
  Planned, organized, and hosted events for the computer science community at Wesleyan

Skills

- Programming: Functional programming (Standard ML, Haskell), web development (Ruby, Rails, JavaScript, Frontend MVC Frameworks), LaTeX, Lower level languages (C, C++).
- Other: Unix, Git, and Vim. Conversant in data science methods - coursework in statistics and machine learning.